

zinc and zinc alloy, the apparatus including a mold and an optional mold insert, the improvement wherein the mold or mold insert is made from a Ni-Be alloy containing about 1.0 to less than 3.0 wt.% Be.

16. The apparatus of claim 15, wherein the Ni-Be alloy is underaged.

17. The apparatus of claim 16, wherein the hardness of the Ni-Be alloy is 90% or less of its peak aged hardness.

18. The apparatus of claim 17, wherein the hardness of the Ni-Be alloy is 75% or less of its peak aged hardness.

19. The apparatus of claim 16, wherein the Ni-Be alloy contains at least one additive selected from the group consisting of Al, C, Co, Cr, Cu, Fe, Mg, Mo, Ti, Y and the Rare Earth Elements.

20. The apparatus of claim 16, wherein the alloy contains about 1.0 to 2.0 wt.% Be.

21. The apparatus of claim 16, wherein at least one surface of the mold or mold insert made from the Ni-Be alloy has a tightly adherent beryllium oxide coating sufficient to substantially prevent aluminum soldering when the surface is contacted with molten aluminum.

22. A tool for contacting a molten metal at elevated temperature, wherein the tool is made from a Ni-Be alloy containing about 1.0 to less than 3.0 wt.% Be, at least one surface of the tool having a tightly adherent beryllium oxide coating sufficient to substantially prevent aluminum soldering when the surface is contacted with molten aluminum.

23. The tool of claim 22, wherein the Ni-Be alloy is underaged.

24. The tool of claim 23, wherein the hardness of the Ni-Be alloy is 90% or less of its peak aged hardness.

25. The tool of claim 24, wherein the hardness of the Ni-Be alloy is 75% or less of its peak aged hardness.

26. The tool of claim 23, wherein the Ni-Be alloy contains at least one additive selected from the group consisting of Al, C, Co, Cr, Cu, Fe, Mg, Mo, Ti, Y and the Rare Earth Elements.

27. The tool of claim 23, wherein the alloy contains about 1.0 to 2.0 wt.% Be.

28. The process of claim 11, wherein the Ni-Be alloy is underaged.

29. The process of claim 28, wherein the hardness of the Ni-Be alloy is 90% or less of its peak aged hardness.